



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,283	09/14/2006	Masanori Wada	2006-0184A	3298
513	7590	03/21/2007	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			ROJAS, OMAR R	
			ART UNIT	PAPER NUMBER
			2874	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/21/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/568,283	WADA ET AL.	
	Examiner	Art Unit	
	Omar Rojas	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 1-7 and 9-20 is/are rejected.
 7) Claim(s) 8 is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 02/15/2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>05/16/2006</u>	6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The prior art documents submitted by Applicant(s) in the Information Disclosure Statement(s) ("IDS") filed on May 16, 2006 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Drawings

3. Figures 3A to 3C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999) (meaning of words used in a claim is not construed in a “lexicographic vacuum, but in the context of the specification and drawings”). In interpreting the claim terms "precision sleeve" and "Ra", the examiner has relied upon the following definitions provided by applicant(s) on page 6 of the specification.

The term "precision sleeve" as used herein refers to a tubular sleeve which is not split as in a split sleeve and which has a larger inner diameter than an outer diameter of an optical connector ferrule to be inserted. Further, the term "Ra" refers to an arithmetic average roughness defined by JIS B0601 (including the same content as that of ISO4287) by Japanese Industrial Standard.

7. **Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 2003-222764 to Morooka et al. ("Morooka") submitted as part of Document "AJ" of the IDS.**

Document AJ further includes an English translation of the Morooka document that has been relied upon by the examiner.

In re claim 1, Morooka discloses an optical receptacle (Figures 1-3) comprising:

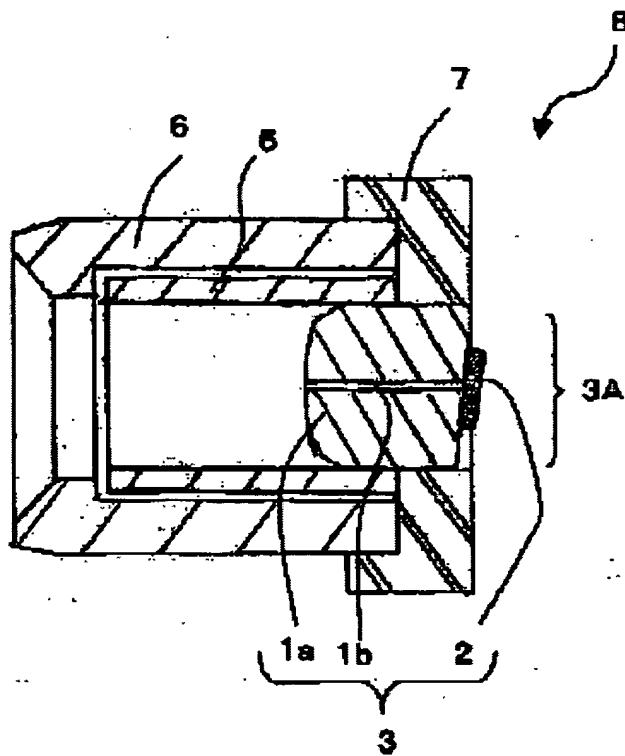
a precision sleeve 5;

a stub 3 with an optical fiber 1b fixed to one end of an inner hole of the precision sleeve

5 through an adhesive (Document AJ: page 6, paragraphs [0022] & [0026]);

and a sleeve holder 6/7 fixed to an outer periphery of the precision sleeve 5 by press-fitting or through an adhesive (Document AJ: page 4, paragraph [0004] and page 7, [0043]);

wherein both the outer peripheral face of the stub 3 and the inner hole of the precision sleeve 5 have a surface roughness Ra value of 0.2 micrometers or less (Document AJ: page 7, paragraph [0036]). Figure 1 of Morooka is reproduced below.



In re claim 4, Morooka discloses a bore tolerance between the sleeve 5 and the ferrule 1a of 1 micrometers or less (Document AJ: page 7, paragraph [0036]).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

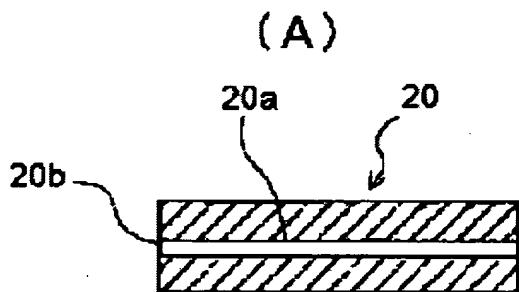
9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 2, 3, 5-7, and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morooka as applied to claims 1 and 4 above, and further in view of JP 2003-149502 to Saito et al. ("Saito") submitted as part of Document "AI" of the IDS.

Document AI further includes an English translation of the Saito document that has been relied upon by the examiner.

In re claims 2 and 10, Morooka only differs from the claims in that Morooka does not expressly teach that the outer periphery of his stub 3 or the inner hole of his precision sleeve 5 has a surface roughness Ra value of more than 0.2 µm and a surface roughness Ry value of 4.0 µm or

less, and a difference between an average line and a peak line of surface roughness is 2.0 μm or less. Saito, however, teaches an inner hole 20a of a capillary tube 20 having values of a surface roughness Ra, a surface roughness Ry, and a difference between an average line and a peak line of surface roughness that overlap the values recited by claim 2. *See Document A1, page 10, paragraph [0040].* Figure 1 of Saito is reproduced below.



Although Saito is primarily concerned with the alignment between his capillary tube 20 and an optical fiber, the same physical principles would have also applied to aligning Morooka's precision sleeve 5 and ferrule 1a. In other words, one of ordinary skill in the art would have easily recognized that solutions for optimizing alignment between a cylindrical optical fiber and a cylindrical tube (Saito) would also apply to aligning a cylindrical ferrule with a cylindrical sleeve (Morooka). The motivation for combining Saito with Morooka would have been to optimize alignment between the sleeve 5 and ferrule 1a of Morooka by applying similar techniques to those used by Saito to align his optical fiber and capillary tube. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 2 and 10 in view of Morooka combined with Saito.

In re claims 3 and 11, Morooka only differs from the claim in that Morooka does not expressly teach that his optical fiber 1b has a concentricity of 0.5 μm or less with respect to the outer periphery of his stub 3. Saito, however, teaches an optical fiber having a concentricity of 0.7 micrometers or less with respect to the outer periphery of a stub/capillary tube 20. *See* page 10, paragraph [0040] of Document AI. The motivation for combining Saito with Morooka would have been to optimize the alignment between the optical fiber 1b and the stub 3 disclosed by Morooka. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 3 and 11 in view of Morooka combined with Saito.

In re claim 5, Morooka only differs from the claim in that Morooka does not expressly teach that his ferrule 1a is formed of crystallized glass. Saito, however, teaches a ferrule/capillary tube 20 formed of crystallized glass. *See* page 10, paragraph [0042] of Document AI. The motivation for combining Saito with Morooka would have been to optimize the alignment between the optical fiber 1b and stub 3 disclosed by Morooka. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 5 in view of Morooka combined with Saito.

In re claim 6, Morooka only differs from the claim in that Morooka does not expressly teach that his precision sleeve 5 is formed of crystallized glass. Saito, however, teaches that a capillary tube 20 made of crystallized glass saves manufacturing costs and reduces optical connection losses. *See* page 6, paragraph [0013] and page 10, paragraph [0042] of Document AI. The same

benefits would also apply when using crystallized glass to form the sleeve of Morooka. Additional motivation for using a precision sleeve made of crystallized glass would have been to optimize the alignment between the sleeve 5 and ferrule 1a of Morooka by applying similar techniques used by Saito to align his optical fiber and capillary tube. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 6 in view of Morooka combined with Saito.

In re claim 7, Saito also teaches that his crystallized glass capillary tube 20 comprises a crystal grain size and crystal amount as specified by claim 7. *See* page 13, paragraph [0057] of Document AI. Therefore, it would have also been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 7 in view of Morooka combined with Saito using the same rationale mentioned with respect to claim 5.

In re claims 9 and 12, Saito also teaches an optical fiber having a concentricity of 0.7 micrometers or less with respect to the outer periphery of a stub/capillary tube 20. *See* page 10, paragraph [0040] of Document AI. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 9 and 12 in view of Morooka combined with Saito for the same reasons mentioned with respect to claims 2, 3, 10, and 11.

In re claims 13-20, the invention specified by these claims is also considered obvious under 35 U.S.C. § 103 for analogous reasons to those mentioned with respect to claims 2, 3, 5-7, and 9-12.

Allowable Subject Matter

11. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: The primary reason for allowance of claim 8 is the inclusion of the adhesive contains 10 vol% or more of fillers having a maximum particle size of 0.5 µm or less and an average particle size of 0.3 µm or less. None of the prior art of record appears to teach using an adhesive having these particular features. Applicant(s) have further disclosed benefits for using the adhesive of claim 8 such as reduced volume shrinkage.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patent No. US 6,761,490 B2 is part of the patent family belonging to the aforementioned Saito document.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (9:00PM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number

Art Unit: 2874

for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas
Patent Examiner
Art Unit 2874

or

March 19, 2007



Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800